UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,165	12/21/2001	Hanan Z. Moller	Koob 3-2-16	6765

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ART UNIT	PAPER NUMBER
2665	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/037,165	MOLLER ET AL.
	Examiner	Art Unit	
	Lina Yang	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>21 December 2001</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-17</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-17</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>15 March 2002</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/10/2003</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   The disclosure is objected to because of the following informalities.

Please fill out the empty _____on page 8 lines 15-18:

"Method for Encoding/Decoding a Binary Signal State in a Fault Tolerant
Environment," filed on _____ and assigned application Ser. No. _____, which is
hereby incorporated by reference (Attorney's docket number 124174).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form

the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public
use or on sale in this country, more than one year prior to the date of application for patent in the United
States.

(e) the invention was described in (1) an application for patent, published under section 122(b),
by another filed in the United States before the invention by the applicant for patent or (2) a
patent granted on an application for patent by another filed in the United States before the
invention by the applicant for patent, except that an international application filed under the treaty
defined in section 351 (a) shall have the effects for purposes of this subsection of an application
filed in the United States only if the international application designated the United States and
was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as being unpatentable by

Ganmukhi et al. (US Patent No. 5,953,314).

Regarding claim 1, Ganmukhi teaches a method (fig. 1) for controlling data flow

between a plurality of input devices and a plurality of output devices through a first or a

second switch fabric interposed therebetween, wherein the first switch fabric is the

operative switch fabric, and the second switch fabric is in a standby mode, said method comprising:

(a) producing a control signal prior to causing the first switch fabric to assume the standby mode and the second switch fabric to assume the operational mode (col.3 lines 62-67 and col. 4 lines 1-7);

(b) in response to the control signal, terminating the transmission of signals into the first switch fabric from the plurality of input devices (col. 4 lines 8-10);

(c) in response to the control signal, starting a drain timer (col. 4 lines 10-15 and lines 21-24; starting 40 ms counting); and

(d) when the drain timer has timed out (40ms), sending signals from the plurality of input devices into the second switch fabric (col. 4 lines 10-16; "active" inherently has all the control of the resources col. 3 lines 16-19).

Regarding claim 2, Ganmukhi further teaches that the drain timer (40ms) has a time-out value selected such that under normal operating conditions all data will be routed out of the first switch fabric when the drain timer reaches the time-out value (col. 4 lines 8-15; where 40 ms is the time for the former active switch fabric to "clean up operations and store current state information to non-volatile storage". "Clean up" inherently includes routing out the data in the switch fabric).

Regarding claim 4, Ganmukhi further teaches that (d) when the drain timer

(40ms) has timed out, preparing to receive data from the second switch fabric at the

plurality of output devices (col. 4 lines 10-16; "active" inherently has all the control of the

resources col. 3 lines 16-19).

3.   Claims 1-9, 11- 17 are rejected under 35 U.S.C. 102(e) as being unpatentable by

Chidambaran et al. (U. S. Patent Application No. 20020141344 A1).

Regarding claim 1, Chidambaran teaches a method (fig. 1) for controlling data

flow between a plurality of input devices and a plurality of output devices through a first

or a second switch fabric interposed therebetween, wherein the first switch fabric is the

operative switch fabric, and the second switch fabric is in a standby mode, said method

comprising:

(a) producing a control signal prior to causing the first switch fabric to assume the

standby mode and the second switch fabric to assume the operational mode (fig. 11,

step 202 ([0078]);

(b) in response to the control signal, terminating the transmission of signals into

the first switch fabric from the plurality of input devices (fig. 11 step 204, [0079]);

(c) in response to the control signal, starting a drain timer (fig. 11 step 206,

[0080]); and

(d) when the drain timer has timed out , sending signals from the plurality of input devices into the second switch fabric (fig. 11 step 214, [0081]).

Regarding claim 2, Chidambaran further teaches that the drain timer has a time-out value selected such that under normal operating conditions all data will be routed out of the first switch fabric when the drain timer reaches the time-out value (fig. 11 step 206, [0080]).

Regarding claim 3, Chidambaran further teaches that:

(b1) in response to the control signal, terminating the transmission of data into the first switch fabric from the plurality of input devices (fig. 11 step 204, [0079]);

(b2) in response to the control signal, starting a drain timer (fig. 11 step 206, [0080]);

(b3) at the plurality of input devices, receiving a switch empty signal from the first switch fabric when there is no data in the first switch fabric (" a grant for EOF test cell", [0074]);

(c) when the drain timer has timed out or the switch empty signal has been received, sending data from the plurality of input devices into the second switch fabric (fig. 11 step 214, [0081]).

Regarding claim 4, Chidambaran further teaches that (d) when the drain timer

has timed out, preparing to receive data from the second switch fabric at the plurality of

output devices ("SOF" test cell, [0074]).

Regarding claim 5, Chidambaran further teaches (d2) when the drain timer has

timed out or the switch empty signal has been received, preparing to receive data from

the second switch fabric as the active switch fabric ([0074]).

Regarding claim 6, Chidambaran teaches a method (fig. 1) for controlling data

flow between a plurality of input devices and a plurality of output devices through a first

or a second switch fabric interposed therebetween, wherein the first switch fabric is the

operative switch fabric, and the second switch fabric is in a standby mode, said method

comprising:

(a) producing a control signal prior to causing the first switch fabric to assume the

standby mode and the second switch fabric to assume the operational mode ([0068]

and step 202 in fig. 11 [0078]);

(b) in response to the control signal, terminating the transmission of data into the

first switch fabric from the plurality of input devices (step 204 in fig. 11 and [0079];

[0068] and [0071] using EOF STC);

(c) providing a switch-empty signal from the first switch fabric to the plurality of

input devices when no data is in transit through the first switch fabric ([0072]; " a grant

for EOF test cell", [0074]); and

(d) at the plurality of input devices, in response to the switch-empty signal

sending data into the second switch fabric ([0068] and [0071] using SOF STC).

Regarding claim 7, Chidambaran further teaches:

(c1) providing a switch-empty signal from the first switch fabric to the plurality of

input devices when no data is in transit through the first switch fabric ([0072]);

(c2) in response to the control signal, starting a drain timer ([0072], the time for

all in-transit cells to drain); and

(d) if the drain timer has timed out or the empty switch signal has been received,

sending data into the second switch fabric from the plurality of input devices ([0068] and

[0071] using SOF STC).

Regarding claim 8, Chidambaran further teaches starting a restart timer (step

206 in fig. 11 and [0080]) after the drain timer has timed out or the empty switch signal

has been received, wherein data is sent into the second switch fabric as the active

switch fabric when the restart timer has timed out ([0073] and [0074]).

Regarding claim 9, Chidambaran further teaches the plurality of input and the output devices are associated with a packet data network ([0001]).

Regarding claim 11, Chidambaran further teaches the control signal is provided in response to a fault in the active switch fabric (([0064]).

Regarding claim 12, Chidambaran teaches a method for switching between a first and a second switch fabric in a data network, wherein a plurality of line cards are connected to both the first and the second switch fabrics for transmitting and receiving data traffic, wherein at least one of the first and the second switch fabrics is the active switch fabric, said method comprising:

(a) at each of the plurality of line cards, receiving a terminate signal to discontinue operation of the active switch fabric (step 202 in fig. 11 [0078]);

(b) in response to the terminate signal, terminating the transmission of data traffic from each one of the plurality of line cards into the active switch fabric (step 204 in fig. 11 and [0079]);

(c) in response to the terminate signal, at each one of the plurality of line cards, starting a timer (step 206 in fig. 11 and [0080]);

(d) sending an empty switch fabric signal from the active switch fabric to each of

the line cards when the active switch fabric is empty (" a grant for EOF test cell",

[0074]);

(e) at each one of the plurality of line cards, determining whether the timer has

timed out or the empty fabric signal has been received (step 206 in fig. 11 and [0080];

or, " a grant for EOF test cell", [0074]);

(f) redesignating the previous standby switch fabric as the active switch fabric

and the previous active switch fabric as the standby switch fabric (steps 216 and 218 in

fig. 11; [0082] and [0083]) ; and

(g) sending and receiving data traffic between each of the plurality of line cards

and the active switch fabric ([0074]).

Regarding claim 13, Chidambaran further teaches starting a restart timer (step

206 in fig. 11 and [0080]) after the drain timer has timed out or the empty switch signal

has been received, wherein data traffic is sent into the second switch fabric as the

active switch fabric when the restart timer has timed out ([0073] and [0074]).

Regarding claim 14, Chidambaran teaches a switch controller for controlling data

flow between a first and a second switch fabric in a data network, wherein a plurality of

line cards are connected to both the first and the second switch fabrics for transmitting

and receiving data traffic, and wherein at least one of the first and the second switch fabrics is the active switch fabric, and wherein said switch controller is responsive to a switch fabric empty signal indicating that there is no data traffic in the active switch fabric and further responsive to a switch fabric select signal identifying the active switch fabric, said switch controller comprising:

a first circuit module responsive to the switch fabric select signal for providing a first signal to the plurality of line cards, wherein said first signal instructs the plurality of line cards to terminate sending data traffic into the active switch fabric ([0078] and [0079]);

a drain timer started in response to the switch fabric select signal for providing a first time-out signal when said drain timer has timed out ([0080]);

a logic device producing a second signal in response to said first time-out signal and said fabric empty signal (208 and 210 in fig. 11; [0080] and [0081]);

a restart timer (212 in fig. 11; [0081]) started in response to said second signal for providing an enable signal when said restart timer has timed out, wherein said enable signal is input to the plurality of line cards for instructing the plurality of line cards to begin sending data traffic into the active switch, and wherein the plurality of line cards are responsive to the switch fabric select signal for identifying the active switch fabric (214 in fig. 11; [0081]).

Regarding claim 15, Chidambaran further teaches the drain timer has a time-out value selected such that under normal operating conditions all data will be routed out of the active switch fabric when the drain timer has timed-out (fig. 11 step 206, [0080]).

Regarding claim 16, Chidambaran further teaches the restart timer has a time-out value selected such that each one of the plurality of line cards is enabled for sending and receiving data traffic at about the same time (212 in fig. 11; [0081]).

Regarding claim 17, Chidambaran further teaches a switching system for carrying data traffic between a plurality of input and output lines, wherein a switch fabric select signal identifies the active switch fabric, said switching system comprising;

a first and a second switch fabric for switching data traffic between one or more of said plurality of input and output lines, wherein one of said first and said second switch fabrics is the active switch fabric, and wherein the active switch fabric provides an empty switch fabric signal indicating there is no data traffic in the active switch fabric (fig. 1);

a plurality of line cards connected to one or more of the plurality of input and output lines and further connected to said first and said second switch fabrics for sending data traffic into and receiving data traffic from said first and said second switch fabrics (fig. 1);

a first circuit module responsive to the switch fabric select signal for providing a

first signal to the plurality of line cards, instructing the plurality of line cards to terminate

sending data traffic into the active switch fabric ([0078] and [0079]);

a drain timer started in response to the switch fabric select signal for providing a

first time-out signal when said drain timer has timed out ([0080]);

a logic device for producing a second signal in response to at least one of said

first time-out signal and said fabric empty signal (208 and 210 in fig. 11; [0080] and

[0081]);

a restart timer (212 in fig. 11; [0081]) started in response to said second signal

for providing an enable signal when said restart timer has timed out, wherein said

enable signal is input to the plurality of line cards for instructing the plurality of line cards

to begin sending data traffic into the active switch, and wherein the plurality of line cards

are responsive to the switch fabric select signal for identifying the active switch fabric

(214 in fig. 11; [0081]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or
described as set forth in section 102 of this title, if the differences between the
subject matter sought to be patented and the prior art are such that the subject
matter as a whole would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

4.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over by

Chidambaran et al. (U. S. Patent Application No. 20020141344 A1) in view of Corbalis

et al. (U. S. Patent No. 6882766 B).

Regarding claim 10, Chidambaran differs from the claimed invention in that

Chidambaran does not specifically teach the plurality of input and the output devices are

associated with a telephony network and wherein the data represents voice signals.

However, it is well known in the art that the switch fabrics are commonly used in a

telephony network and wherein the data represents voice signals. For example,

Corbalis teaches that the plurality of input and the output devices are associated with a

telephony network and wherein the data represents voice signals (col. 1 lines 30-39).

Therefore, it would have been obvious for one of ordinary skill in the art at the time

when the invention was made to include the plurality of input and the output devices are

associated with a telephony network and wherein the data represents voice signals, as

taught by Corbalis in the assembly of Chidambaran in order to serve different data

networks.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to
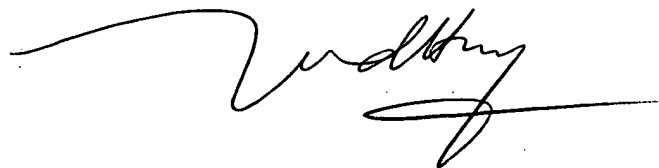
applicant's disclosure.

Abbiate et al. (US Patent No. 6,661,786 B1) teaches a method providing a

service message capability that permits an easy switch-over process between two

particular Switch Fabrics that are mounted in a fault tolerance arrangement.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lina Yang whose telephone number is (571)272-3151.

The examiner can normally be reached on 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 517-273-8300..

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

LY

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